

ABSTRACT OF THE DISCLOSURE

In a method and device for welding rails with a heat treated head, the halves of a casting mold made from a refractory material having at least one lateral vent are mounted around two end pieces of the rail that are to be connected, thereby forming a casting space. The mounting mold is preheated and the casting space is sealed by a sealing element made of refractory material covering the rail head; steel produced by a metallothermic process penetrates into the casting space after passing over the sealing element and fills the space, whereby alloy inserts in solid and compact form arranged above the rail head in the casting space are contacted with part of the steel forming the weld in the head zone.